



United States Department of

Health & Human Services

Office of the Assistant Secretary for Preparedness and Response



HHS Anthrax Medical Countermeasure Program (*Anthrax Antitoxins*)

***Presentation to the FDA/CDER
Anti-Infective Drugs Advisory Committee***

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Overview



- Threat
- Medical Countermeasures Strategy
- Requirements
- HHS Antitoxin Procurement Program
- Clinical Guidance (draft)

Anthrax Threat

- Category A Threat Agent
 - Poses greatest possible threat on public health, economic, social and political disruption
 - May spread across large areas
 - Great deal of planning needed to protect public
- Department of Homeland Security issued Material Threat Determination (MTD) in 2004



Amerithrax

- Seven letters mailed over two weeks
- 30,000 people started on PEP antibiotics
 - 11 cases of inhalational anthrax developed
 - 5 resulted in death
- Over \$225 million spent to decontaminate seven buildings
- Lessons Learned
 - Antibiotics alone are not sufficient to treat anthrax
 - Antibiotics address bacteremia, not toxemia
 - Death results from organ failure and severe edema (result of toxemia)





Anthrax Medical Countermeasures Strategy



- **Develop, Stockpile, and Approve/License all Products**
- **Vaccines**
 - BioThrax[®] (Anthrax Vaccine Adsorbed)
 - Licensed for general use prophylaxis
 - Pre-EUA dossier filed with FDA for post-exposure prophylaxis (PEP)
- **Antibiotics**
 - Approved for PEP (Cipro and Doxy)
 - Current concept of operations – 60 days of antibiotics and three doses of BioThrax[®]
- **Antitoxins**
 - Treatment of symptomatic patients
 - Raxibacumab and AIG preEUA dossiers filed with FDA

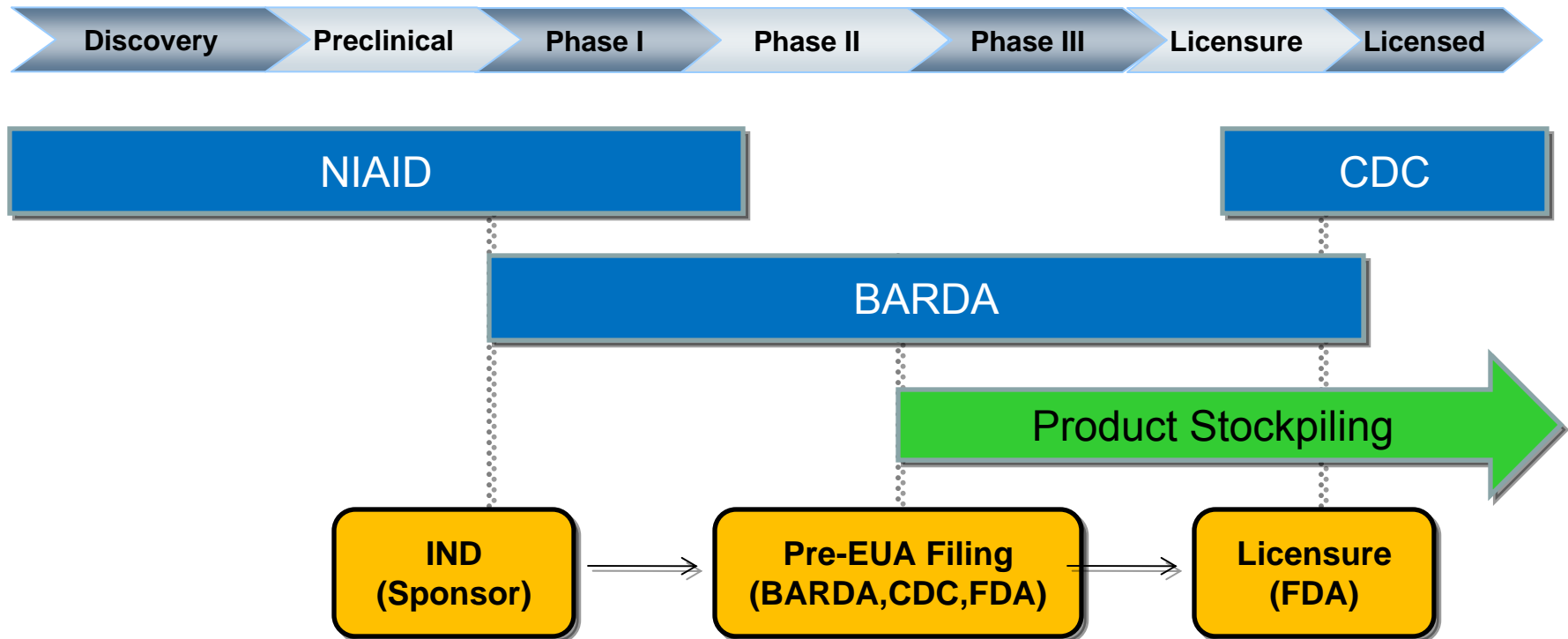


USG Antitoxin Requirements



- Department of Homeland Security Material Threat Assessment based on a mass casualty event in a large metropolitan area
 - 260,000 treatment courses for wild type anthrax
 - 566,000 treatment courses for multi-drug resistant anthrax
- 2009 – USG finalized requirement for anthrax antitoxins
 - In addition to antibiotics and vaccines, a drug is required to treat toxemic effects of anthrax infection
- 2011 – USG revalidated requirement for antitoxins

Stockpiling Strategy



**Stockpiling is triggered by attaining sufficient data to support
EUA. Goal is to seek licensure.**



Project BioShield Procurements



- Raxibacumab®
 - Human Genome Sciences/GSK
 - Monoclonal antibody directed against Protective Antigen
 - IV formulation
 - Efficacy modeled in rabbits and NHPs with 200 LD₅₀ spore challenge
 - Added benefit modeled in “delayed-treatment” rabbit model
 - Safety and PK in healthy adults
- Anthrax Immune Globulin (AIG)
 - Cangene
 - Human polyclonal antibody raised against BioThrax®
 - IV formulation
 - Efficacy modeled in rabbits and NHPs with 200 LD₅₀ spore challenge
 - Added benefit modeled in “delayed-treatment” rabbit model
 - Safety and PK in healthy adults





Clinical Guidance (Draft)



- CDC recommends adding antitoxin to combination antimicrobial therapy for any patients with confirmed systemic anthrax
 - No human data on “optimal” time for use – animal model data under evaluation; however early administration favored by expert panel
 - High mortality rate of anthrax, risk of antitoxin therapy adverse event rate low – potential benefit favors therapy
- During a large event, which could overwhelm the healthcare system and limit antitoxin availability
 - Antitoxin should be added to combination antimicrobial therapy for nonmoribund patients with new onset of dysfunction in one or more organ systems



Summary



- USG requirements for anthrax antitoxins are derived from plausible, high consequence scenarios that are modeled to generate scientifically informed estimates of disease impact that are necessary to gauge medical consequences and the requisite mitigation measures
- HHS is committed to the development of anthrax medical countermeasures (antibiotics, vaccines, and antitoxins) that will play a critical role in the response to an anthrax attack or release